

REMARKS

Response to Restriction Requirement

The Examiner requires restriction to one of six of the following groups:

- Group I: Claims 1-12, 25-32, and 35-39, drawn to a first product that is a nucleic acid, a genetically modified plant cell, a plant comprising said cell, propagation material, a vector, a host cell and a first method of identifying a plant.
- Group II: Claims 13 and 19, drawn to second product wherein the product is a modified or derived starch.
- Group III: Claims 14-17, drawn to a second method wherein the method is a method for manufacturing starch.
- Group IV: Claims 21-22, drawn to a third product wherein the product is flour.
- Group V: Claims 23-24, drawn to a third method wherein the method is a method for manufacturing flour.
- Group VI: Claims 33-34, drawn to a fourth product wherein the product is a protein.

Applicants hereby provisionally elect **Group I**, which covers, according to the Office Action, claims 1-12, 25-32, and 35-39, drawn to a first product that is a nucleic acid, a genetically modified plant cell, a plant comprising said cell, propagation material, a vector, a host cell and a first method of identifying a plant, **with traverse**. Applicants also provisionally elect SEQ ID NOs: 3 and 4 **with traverse**. Applicants reserve their right to request rejoinder in the instant application and to file one or more divisional applications to the non-elected subject matter.

A. The Technical Feature Linking Groups I-VI Defines A Contribution Over The Prior Art

The Office Action states “[m]ost of the above groups are not linked by a technical feature and are independent from one another, but wherein the groups are linked by a technical feature, the technical feature is an phosphoglucan gene or protein, however this feature is not special because it does not constitute an advancement over the prior art.”¹ The Office Action asserts that Ritte et al. (2002 PNAS 99:7166-7171) discloses an alpha-glucan-water dikinase.²

¹ Office Action, page 2.

² *Id.*

Applicants agree that Ritte teaches an alpha-glucan-water dikinase (also known as “R1”), but respectfully disagree that (1) the technical feature is phosphoglucan gene or protein; and (2) that the technical feature—products and methods related to an OK1 protein—does not constitute an advancement over the prior art.

Applicants further submit that the R1 and OK1 proteins are distinct. For example, R1 and OK1 use different glucan-substrates. R1 uses starch, be it already phosphorylated or not,³ whereas OK1 only uses starch as a substrate which already comprises phosphate groups.⁴ Another difference between R1 and OK1 is the position of C-atoms of the glucose molecules of the glucans which become phosphorylated. R1 predominantly transfers phosphate groups to the C-6 position of the glucose molecules,⁵ whereas OK1 predominantly transfers phosphate groups to the C-3 position of the glucose molecules.⁶ Accordingly, Applicants submit that the claims constitute an advancement over the prior art (e.g., Ritte et al.).

Applicants also point out that Groups I-V are directed to products and methods related to an OK1 protein. Furthermore, Group VI is directed to a protein having the activity of an OK1 protein. Accordingly, because Groups I-VI are linked to the same technical feature, all of the claims should be examined together.

B. SEQ ID NOS: 1-4 Should Be Examined Together

The Office Action requires that Applicants elect a single nucleic acid (i.e., SEQ ID NO: 1 or 3) encoding an amino acid sequence (SEQ ID NO: 2 or 4). Applicants acknowledge that SEQ ID NOS: 2 and 4 are not identical, but submit that they both have OK1 protein activity and share a phosphohistidine domain (SEQ ID NO: 5).⁷ Accordingly, because SEQ ID NOS: 1 and 3 encode proteins having OK1 activity and share a

³ See, e.g., US 2008/0022421 (“the ‘421 publication”, which is the publication of the instant application), paragraph [0009].

⁴ See id. at paragraph [0025]; Example 6; Table 1 and Figure 3.

⁵ See id. at paragraph [0009].

⁶ See id. at paragraphs [0254], [0439]; Example 8; Table 4 and Figure 4.

⁷ See id. at paragraphs [0049], [0051], [0080], [0084] and [0271].

phosphohistidine domain (SEQ ID NO: 5), Applicants submit that SEQ ID NOs: 1-4 should be examined together.

In view of the above remarks, it is respectfully requested that the Restriction Requirement be withdrawn and that all claims be allowed to be prosecuted in the same patent application. In the event that the requirement is made final and in order to comply with 37 C.F.R. § 1.143, Applicants reaffirm the election with traverse of claims 1-12, 25-32, and 35-39 (Group I) and SEQ ID NOs: 3 and 4.

CONCLUSION

In view of the foregoing, Applicants respectfully request an indication of allowance of all claims.

If the Examiner has any questions relating to this response, or the application in general, she is respectfully requested to contact the undersigned so that prosecution of this application may be expedited.

Respectfully submitted,

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